

ORNITHOLOGICAL LITERATURE

PARENTAL CARE AND ITS EVOLUTION IN BIRDS. By S. Charles Kendeigh. Illinois Biological Monographs (vol. 22, nos. 1-3), University of Illinois Press, Urbana, 1952: 7 × 10¼ in., 356 pp. \$4.00, paper; \$5.00, cloth.

Lest this volume be accepted at its face value, it is necessary to examine it critically. It is an outcome of the well known House Wren work of Dr. Kendeigh at the Baldwin Bird Research Laboratory, especially that of mechanical recording of birds' visits to nests, plus information on the entire Class Aves carded by student assistants at the University of Illinois. The mélange is not a happy one.

After a brief description of methods, 79 pages are devoted to the House Wren, especially details of its visits to the nest in relation to nest building, clutch size, laying, incubating, feeding and brooding, illustrated with charts and tables of individual records. Similar, but shorter records from Ohio, with more details from the literature on 19 other species, from Killdeer to Song Sparrow, occupy the next 80 pages. These sections are mines of information on detailed activities at the nest, and will be a constant source of reference for students of bird behavior.

The author claims, of the 105 pages devoted to a survey of parental care: "The present summary should bring information on parental care up to date to the year 1950." But it is so sketchy and misleading that it is not even an important guide to the literature. One would gather the impression that practically nothing was known about whole groups of birds for which there is considerable information. This is best shown by some examples.

The family Nectariniidae (sunbirds), of some 104 species, is not listed by Kendeigh, though one species is mistakenly listed under Dicaeidae (flower-peckers) with only the statement that both sexes build and incubate. Checking the few references listed below, the following composite picture based on 16 species of Nectariniidae is possible: nest a pensile structure (usually), or a half oval sewed tailor-bird fashion to the underside of a large leaf; eggs 1-3; nest-building by female only (11 species), female accompanied by male on trips (6 species), and by male and female together (3 species); nest-building prolonged, with periods of days when birds are absent; duration of construction more than 22 days (1 species), 3-5 weeks (1 species), 30 days (1 species), but may be as short as 13 days (1 species), or 7 days for a second nest (1 species); trips to nest during construction made very quickly: 4 trips in 30 minutes and 27 trips in 29 minutes (1 species), 9 trips in 10 minutes (1 species), 14 trips in 60 minutes (1 species); one working day 10 a.m. to 3 p.m. (1 species); egg laid 8 a.m. (1 species); incubation period 12, 13 days (1 species); incubation by female only (8 species), the incubating female visited by male (1 species) or accompanied by male when off eggs (1 species), or incubation by male and female (2 species); young fed by female only (1 species) or by both male and female (4 species); trips with food at 3 minute intervals (1 species); 4-5 insects carried each trip (1 species). References: Baker, 1934, "The nidification of birds of the Indian Empire," Vol. 3, pp. 208-235; Bannerman, 1948, "The birds of tropical West Africa," Vol. 6, pp. 151-193; Cowles, 1936, *Auk*, 53:28-30; Moreau and Moreau, 1937, *Ibis*, 79:336; North, 1907, "Nests and eggs of birds . . . Australia," Vol. 2, p. 208; Potter, 1948, *Wilson Bulletin*, 60:159-163; Rand, 1942, *Bull. Amer. Mus. Nat. Hist.*, 79:354; Vincent, 1949, *Ibis*, 91:327-335.

Of the families that are included, some are very inadequately treated; for example: *Meliphagidae*.—Of the 160 known species Kendeigh has data, incomplete, on only

two species, one Australian and one New Zealand, with only the following data: female builds and incubates, leaving nest to feed; eggs 2; incubation and nesting period 18 days (1 species); both male and female incubate and feed (1 species).

From only two recent sources (Serventy and Whittell, 1948, "Birds of Western Australia," pp. 313-331; Rand, 1942, *Bull. Amer. Mus. Nat. Hist.*, 79:356, 358), it is possible to add the following composite picture based on 14 species: nest a cup or a pensile oval; eggs 1-4; nest building takes 4 days (1 species); female alone builds (3 species), making trips at 5 minute intervals (1 species), accompanied by the male (1 species), both male and female build (2 species); incubation period 14 days (1 species), less than 13 days (1 species); female alone incubates (3 species); both male and female incubate (2 species); nestling period 14, 15 days (2 species); both male and female feed young (3 species); in 70 minutes male fed 5 times, female 5 times (1 species); both male and female brooded young (1 species).

The lack of adequate coverage is indicated by the fact that such authors of standard source books for the birds of Africa as Bannerman, Jackson and Selater, and Selater; of southern Asia as Stuart Baker and La Touche; and of Australia as Campbell, North, Mathews, and Serventy and Whittell, are not even mentioned in the bibliography.

Species are sometimes misplaced in families, for example for the family Prionopidae Kendeigh gives data on 5 genera. Of these five, 3 belong in other families: *Grallina* in Grallinidae, *Hemipus* in Campephagidae, and *Colluricincla* should join *Pachycephala* which Kendeigh has placed in the Muscicapidae.

The understanding of the known, detailed facts for a few species in a family in relation to the less well known behavior of most of its species is poor. This is best shown by the Paradiseidae (43 known species). Kendeigh quotes my studies at the nests of two species in which apparently male and female pair for the whole reproductive period. But he does not point out that these are exceptions in the family in that the male and female are alike, while extreme specialization of the male in plumage ornamentation and display is characteristic of this group. Probably in most species the males have nothing more to do with reproduction after mating with the females at the display grounds. Here, too, a bower bird should have been placed in the family Ptilonorhynchidae, which is not otherwise represented.

That a table showing "average" behavior by families has value, I doubt. Usual behavior, with variations, is something else, but judgment rather than addition and division becomes important here. This is particularly apparent in the birds of paradise (p. 286), mentioned above.

The concluding section is devoted to discussion. The thesis that habits are a good guide to relationships is accepted, and that the primitive condition in parental care is for each parent to take an equal part. Certain trends are pointed out, such as a tendency toward more nest duty by the males in the Palaeognathae; a tendency toward more nest duty by the females in the Passerines; a general tendency toward shorter incubation and nestling periods, and toward shorter and more frequent attentive periods in highly evolved groups.

Groups are variable within themselves and similar behavior has reappeared, probably independently, in many groups. It seems to be implied, based on faith rather than evidence, that order, family, genus, species and subspecies have progressively less differentiated types of behavior. The last few pages are devoted to parental care in the animal kingdom, with 8 lines devoted to contrasting primitive and civilized man.

Obviously, justice has not been done to the subject. This is due in part to the failure to collect the available data. It is also due to the difficulty inherent in drawing con-

clusions from such a small segment of such a very specialized complex of behavior patterns as birds' reproduction. Attentiveness at the nest, besides being affected by weather and individual variation, as pointed out by Kendeigh, should be correlated with courtship and display which precedes it, and with the condition of the young and their survival which follows it.

In the present study as a whole, as the subjects become more removed taxonomically from the House Wren, and their ranges become more removed geographically from Ohio, the value of the paper decreases.—A. L. RAND.

FINDING NESTS. By Bruce Campbell. Collins, St. James' Place, London, 1953: 5 × 7½ in., 256 pp., 40 black and white photos. \$1.76 (12s. 6d.).

The author of this first modern book devoted to techniques of finding nests states, in typically British manner, that the book "is an attempt to reinstate the finding of birds' nests as an important adjunct to ornithology as well as a wonderful sport in its own right." He adds: "I could not count the number of times I have heard competent field ornithologists explain, with a mixture of pride and shame in their tone: 'Of course, I'm hopeless at finding nests.' This has always sounded strange to me; . . . to discover how and why each species selects its nest-site, and to observe how each species visits the nest during its period of use ought to be integral parts of any study of bird behaviour."

Part One of "Finding Nests" contains three introductory chapters: "Why find nests?," "Methods of nest finding," and "Looking at nests." These chapters describe general techniques, well known to many field ornithologists, for finding and gaining access to nests, but which, for the most part, must be learned by personal experience. It is a delight to read these short chapters with their specific suggestions for locating nests.

The remainder of the book (12 chapters) is devoted to 222 species of birds, 184 of which regularly breed in the British Isles. For each of the regular breeding species, there is a concise statement on breeding distribution, the breeding season, habitat, nest-site, nest-composition, and methods for finding the nests. In addition, each chapter is prefaced by a short introduction which describes the similarities and differences between the species covered, and, where possible, indicates general methods of nest-finding applicable to certain groups. These introductory comments are especially interesting and revealing to one who has not been privileged to observe Reed-Warblers (*Acrocephalus scirpaceus*) or Spotted Flycatchers (*Muscicapa striata*) in the field.

The 40 excellent black and white photographs of nests, nest-sites, and adults at the nest add immeasurably to the value of the book.

Probably no one individual is qualified to write a similar book on the breeding birds of the United States or even of one quarter of the country. Such a book authored by several workers, however, undoubtedly would serve as a considerable stimulus to obtain more specific information on many poorly known species—note the dearth of information on many of the American warblers (*cf.*, A. C. Bent, *U. S. Natl. Mus. Bull.* No. 203, 1953). Judging from Mr. Campbell's comments on British birds, the nests of some American birds must be much easier to find. Many nests of the American Goldfinch (*Spinus tristis*), for example, can be found after one learns the "warbling" call of the female given from the nest during the building period as well as during incubation. Similarly, finding the nest of our Warbling Vireo (*Vireo gilvus*), which sings while incubating, frequently is but a matter of locating the singing bird. The loud and persistent food call of the nestling Cowbird (*Molothrus ater*) is also an excellent guide to nests of the hosts.

In the last analysis, there are two prerequisites for finding birds' nests: (1) a genuine interest in nests, and (2) a knowledge of preferred nest-sites. Mr. Campbell notes that:

"If energy and persistence are required to find nests by searching, the key quality in watching back [*i.e.*, watching the adult bird return to the nest] is patience, but as this is the key quality in real bird-watching—as opposed to 'bird-snatching,' the mere pursuit of rarities—it is presumably one which readers of this book already possess."

Mr. Campbell also states that "it is in a knowledge of the likely sites for each species that success in nest-finding lies: the breeding habitat is no more than a general guide. How far such knowledge can be acquired except by personal experience or instruction in the field I admit I am not sure. . . ." He adds further that "the chances of success in all types of searching are much increased if you know what you are looking for; this sounds obvious, but what I mean is that the more nests of the chaffinch you find, the better your mental picture of the 'ideal' chaffinch's nest," and "after a time the eye travels automatically to the likely sites in any habitat. I shall do my best to describe these . . . , but the eye can only be trained in the field."

Mr. Campbell's book is highly recommended to all American ornithologists, professional and amateur, who are interested in "training their eyes" to see birds' nests.—ANDREW J. BERGER.

NEUE ERGEBNISSE UBER DIE ERNAHRUNG DER GREIFVÖGEL UND EULEN (New contributions on the food of hawks and owls). By Otto Uttendörfer. Published by Eugen Ulmer, Stuttgart, z. Z. (14a), Ludwigsburg. 1952:6×8¾ in., 230 pp. (DM12).

This is a compilation, apparently, of all known information on the food of European hawks and owls up to the end of 1946, but important literature subsequent to that date is also cited. Several ornithologists in addition to the author contributed new data, and there are special discussions, credited to R. Kuhk and G. Bodenstein, in the book. The author's face is depicted in a drawing by H. Meissel and recognition marks of hawks and owls in flight are shown on three pages of drawings by Franz Murr.

Extensive data, many of them quantitative, obtained from observations at nest-sites and from stomach analyses are given for 35 species of falcons, hawks, eagles, and vultures and 14 species of owls. American literature is included for those species occurring in both continents. There is a useful summary also of the various species of hawks and owls that attack each species of prey. No serious attempt is made at analyzing the dynamics of predation or the effects of predation on prey populations, but for what it was intended the book is a useful source of information.—S. C. KENDEIGH.

SEARCH FOR THE SPINY BABBLER . . . AN ADVENTURE IN NEPAL. By Dillon Ripley. Houghton Mifflin Company, Boston, 1952:5½×8¾ in., xiv+301 pp., 18 photographs. \$4.00

This is a popular account of Dr. Ripley's most recent expedition to Nepal. He begins with a general discussion of this little known Asiatic kingdom, touching on topics such as geographic position, history, politics, topography, and wildlife. This introduction to the main body of his narrative is of interest to the reader as comparatively little is known about this enigmatic kingdom.

Few outsiders, not to mention naturalists, have ever been inside Nepal. Dr. Ripley and his associates on the expedition were fortunate indeed. They were allowed by the king of Nepal to journey to the capital city of Katmandu. Once in Katmandu they had to obtain permission to visit the interior. The fact that they got this permission is now history but what a gamble it was! If they had not succeeded they would have traveled thousands of miles for nothing.

For years Nepal has remained virtually unknown to ornithologists. The only really extensive work prior to that of Dr. Ripley was done by an Englishman, Brian Hodgson. He, a clerk in poor health working for the British East India Company, was given the choice either of dying at home in England, or in the hills of Asia. He chose to remain and was appointed to assist the Resident placed in the court at Katmandu by the East India Company. Here Hodgson lived and thrived and became an outstanding student of Nepalese ornithology, other branches of natural history, ethnology and linguistics. He succeeded the Resident and remained in Nepal from 1821 to 1843. During this period he recorded 563 species of birds, most of which were brought to him by native collectors, foreigners not being allowed beyond the Katmandu valley. He described 150 of these species for the first time and usually gave the type locality merely as "Nepal." Much of Hodgson's material has now become useless or nearly useless because of "foxing" or through actual loss of specimens.

Nepal, lying lengthwise as it does, along the foothills and in the southern Himalayas, is a critical area in regard to avian distribution. This general area is the meeting place of the Burmese-Malayan tropical faunal elements with the Palaearctic faunal elements from the north. This is one of the reasons Dr. Ripley is so interested in the area, another being the fact that many of the birds that Hodgson reported had not since been recorded from Nepal. Among these were the Spiny Babbler, *Acanthoptila nipalensis*, and the Mountain Quail, *Ophrysia superciliosa*. Ripley found the Spiny Babbler, "whereby hangs the tale," but not the Mountain Quail. This latter bird may be extinct through destruction of its habitat, which leads us to a more sordid aspect of Nepalese conditions.

Ripley noticed the appalling misuse of land, a practice which is apparently increasing. He also noticed that many areas, which were in good condition just a few years previously, were ruined or being ruined. The lovely, wooded hills which lend so much to the scenic and scientific charm of India and Nepal are in many cases being denuded of their forest cover and tilled for crops. This practice leads to the rapid loss of soil during the torrential rains and results in subsequent arid sterility with a lowering of the water table, where once there had been green hills.

A refreshing note, in contrast to the account of the encroachment of "civilization" and the misuse of a beautiful land, was Dr. Ripley's poignant description of the pretty, little, remote mountain village of Dhamkuta. His description of this village is delightful. He has, I think, succeeded here in inspiring a feeling of near-nostalgia for a place very few of us have ever been to.

Dr. Ripley's narrative, for the most part, is vivacious and crammed with amusing, exciting, and sometimes exasperating incidents met with on his travels into the Katmandu valley and thence to western, and finally eastern, Nepal. Those of us who have been to the Far East can read with amusement the exasperating incidents involving uncooperative bearers and the like. Refrains such as "They are taking food, sir. They are just now coming" are probably most fully appreciated by those who have had the opportunity to experience them. The tale is told with feeling and a sensitivity which is to be admired. However, I had some difficulty keeping track of the time when certain happenings were taking place, because of the author's failure to give dates. This was a mild annoyance indeed, far overbalanced by the over-all excellence of the story telling.

Of course, as I have mentioned, the book is primarily a popular one and no great deal of ornithological information is incorporated. Dr. Ripley's party collected around 1600 bird specimens along with about 200 mammals. The bird specimens collected represented 331 species and subspecies. About 50 more species were identified in the field but not

collected. Dr. Ripley has indicated that, judging from subsequent study since the expedition's return, the faunal break between the tropical and palaearctic faunas takes place in eastern Nepal in the region of the Arun Kosi river valley.

Besides the text, the book contains end-paper maps and a bibliography of books about Nepal published in recent years.—W. C. DILGER.